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ABSTRACT

This is one form of three performance checks booklets (A, B, and C) for two texts of Level III of the Intermediate Science Curriculum Study (ISCS). These two texts are Environmental Science (ES), and Well-Being (WB). The 12 performance checks booklets for Level III are considered one of four major subdivisions of a set of individualized evaluation materials for Level III of the ISCS. This booklet (form C), developed to assess the students' achievement of the objectives of the ES and WB of Level III, contains a set of performance checks which are equivalent to the performance checks of the two forms (A and B). Each performance check has its own code number which indicates the unit number and identifies whether it is based on core material or excursions. Directions for students' use of performance checks are also included. (HM)

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INTERMEDIATE SCIENCE CURRICULUM STUDY

ED178282

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INDIVIDUALIZED TESTING SYSTEM

Performance Checks

ISCS LEVEL III
ES-WB
FORM C

SE 028 475

SILVER BURDETT
GENERAL LEARNING CORPORATION
Morristown, New Jersey · Park Ridge, Ill. · Palo Alto · Dallas · Atlanta

INDIVIDUALIZED TESTING SYSTEM

ALL LEVELS
Individualizing Objective Testing (an ITP module)
Evaluating and Reporting Progress (an ITP module)

LEVEL I
Performance Objectives, ISCS Level I
Performance Checks, ISCS Level I, Forms A, B, and C
Performance Assessment Resources, ISCS Level I, Parts 1 and 2

LEVEL II
Performance Objectives, ISCS Level II
Performance Checks, ISCS Level II, Forms A, B, and C
Performance Assessment Resources, ISCS Level II, Parts 1 and 2

LEVEL III
Performance Objectives, ISCS Level III
Performance Checks, ISCS Level III, ES-WB, Forms A, B, and C
WYY-IV, Forms A, B, and C
IO-WU, Forms A, B, and C
WW-CP, Forms A, B, and C
Performance Assessment Resources, ISCS Level III, ES-WB
WYY-IV
IO-WU
WW-CP

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FOREWORD

To implement an educational approach successfully, one must match the philosophy of evaluation with that of instruction. This is particularly true when individualization is the key element in the educational approach. Yet, as important as it is to achieve this match, the task is by no means simple for the teacher. In fact, without specific resource materials to help him, he is apt to find the task overwhelming. For this reason, ISCS has developed a set of individualized evaluation materials as part of its Individualized Teacher Preparation (ITP) program. These materials are designed to assist teachers in their transition to individualized instruction and to help them tailor their assessment of students' progress to the needs of all their students.

The two modules concerned with evaluation, *Individualizing Objective Testing* and *Evaluating and Reporting Progress*, can be used by small groups of teachers in in-service settings or by individual teachers in a local school environment. Hopefully, they will do more than give each teacher an overview of individualized evaluation. These ITP modules suggest key strategies for achieving both subjective and objective evaluation of each student's progress. And to make it easier for teachers to put such strategies into practice, ISCS has produced the associated booklets entitled *Performance Objectives, Performance Assessment Resources*, and *Performance Checks*. Using these materials, the teacher can objectively assess the student's mastery of the processes, skills, and subject matter of the ISCS program. And the teacher can obtain, at the moment when they are needed, specific suggestions for remedying the student's identified deficiencies.

If you are an ISCS teacher, selective use of these materials will guide you in developing an individualized evaluation program best suited to your own settings and thus further enhance the individualized character of your ISCS program.

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NOTES TO THE STUDENT

Now that you have completed several chapters, excursions, and self-evaluations, you are ready to help your teacher determine how well you are doing. The performance checks in this book will provide your teacher with this information. Then your teacher can help you with things you may not understand and can keep a record of your progress.

Read the next section carefully. It explains some important things about the performance checks in this book, and it gives you specific suggestions for using them.

What You Need To Know about Performance Checks

1. **You do performance checks when you are ready.** Performance checks are somewhat like the questions in the self-evaluations – you do them when you are ready, not when the whole class is ready.
2. **Your teacher or both of you decide how many you do.** Your teacher or you and your teacher together will decide which ones you should do. You are not expected to do all of the performance checks.

3. **There are three forms for each performance check.** Every performance check is written in three forms – A, B, and C. (The title of this booklet tells you whether it is Form A, B, or C.) Usually the answers for each form are different. When you do a check, you will use only one form. The A, B, and C forms are always in different booklets. Within each booklet all the performance objectives for the same unit are listed together. A unit contains two or three chapters and their related excursions. These units are in numerical order. Each unit has performance checks based on core material and performance checks based on excursions.
4. **Each performance check has its own number.** The number is in the outside margin of the page and will look like this: ES-03-Core-17A or WB-01-Exc 2-2-2A. These numbers mean

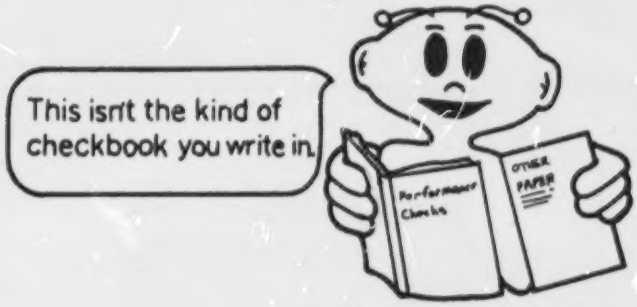
ES	- 03	- Core	- 17	A	and	WB	- 01	- Exc	2-2	- 2	A
text	unit	based on core material	check number	form of the check		text	unit	based on excursion material	excursion number	check number	form of the check

5. **Each performance check is separated from the other.** There is a line before each performance check and one after it. Some performance checks have several parts, so do everything called for between the lines. If there is no line at the bottom of a page, the check is continued onto the next page.

6. **Sometimes you will need to use equipment.** If special materials are needed, they will be in boxes labeled with the same number and sometimes the same letter too as the performance check for which you need them.

7. **Some performance checks have two or more answers.** If more than one answer is correct, you must select all the correct choices. In such cases, selecting just one answer is not enough.

8. **Some performance checks have no answers.** Occasionally, you may be asked to do something that is impossible and to explain your answer. If so, say that the task is impossible and explain why.



9. **You share books of performance checks and YOU DO NOT WRITE IN THEM.** Write your answers on other paper. Give the number and form of the performance check for each answer you write. If you are to draw a graph, a chart, or a map, your teacher may provide you with grid paper or a copy of the map or chart.

10. **Your teacher or his assistant will collect and mark your checks.** And sometimes you must ask him to watch or assist you as you do a check.

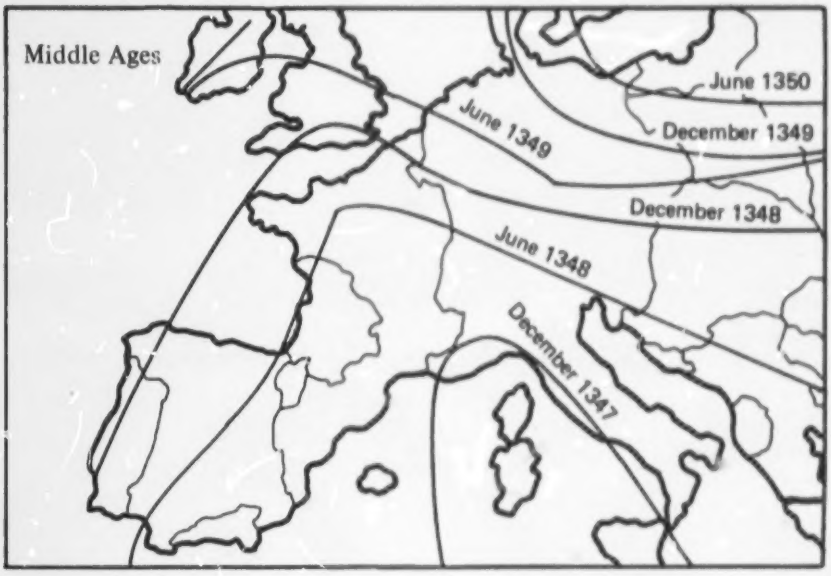
11. **Sometimes a review procedure will be suggested.** If you can't do a performance check, you may be asked to review a part of the text or a self-evaluation question. You may then be checked on the same material, so be sure you understand the material you review. Get help if you need it.

Environmental Science **ES**

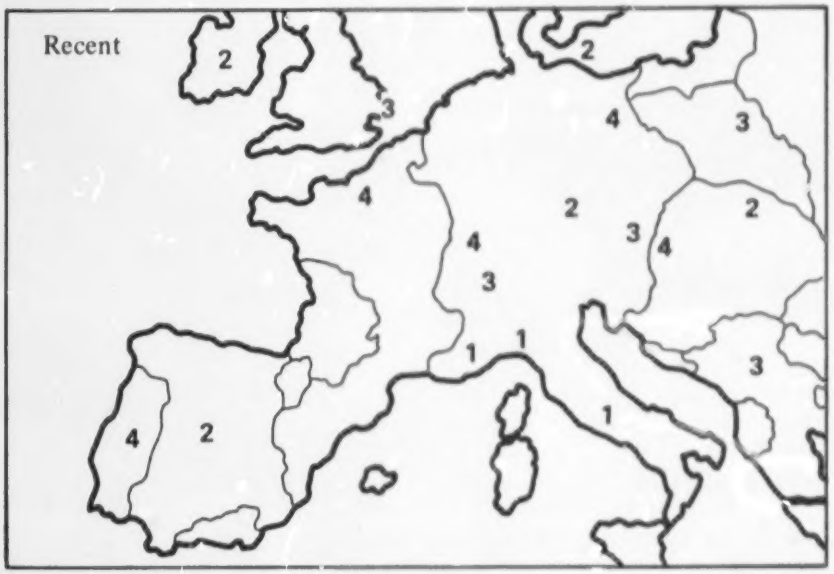
ES
01-Core-1C

Flu is an easily caught disease which occurs in different forms. During the Middle Ages such diseases often spread across Europe, but they spread slowly and regularly outward from a single city. Today, on the other hand, northern Europe may have a flu epidemic at the same time that a flu epidemic occurs in southern Europe. Look at the maps below. Then explain why diseases spread much more rapidly and irregularly from place to place today than they did in the Middle Ages.

Epidemics in Europe



(Dated lines represent time of outbreak)



KEY

SYMBOL	OUTBREAK REPORTED
1	1st week
2	2nd week
3	3rd week
4	4th week

ES 01-Core-2C

Get a copy of the map labeled ES-01-Core-2 from your teacher. Suppose that outbreaks of smallpox were recorded as shown below.

MONTH AND YEAR	NEW CITIES AFFECTED
January, 1840	Lisbon, Madrid, Bordeaux, Angers, Bristol, and Dublin
July, 1840	Trondheim, Hamburg, Frankfurt, Venice, and Rome
January, 1841	Riga, Warsaw, Dresden, Prague, Vienna, Belgrade, and Athens

Draw a line of best fit for each one of the dates given in the table above.

ES 01-Core-3C

Doctors in a distant country have discovered that a disease which is transferred from one person to another is spreading rapidly.

1. Is it likely to spread more rapidly in the rural areas or in big cities?
2. Explain your answer.

ES 01-Core-4C

Suppose a certain country announced that an epidemic like the 14th century Black Death is spreading.

1. Could an epidemic of that kind occur today?
2. Explain your answer.

ES 01-Core-5C

List two or more conditions that would favor the spread of an epidemic throughout a large city.

ES 01-Core-6C

A doctor has been hired to help the government of a heavily populated country. His job is to advise the government as to the fastest and most effective way to reduce the number of epidemics of serious illnesses that sweep the country from time to time. The government can afford only one of the programs listed below.

a. Developing an improved transportation system so that doctors can travel more quickly
b. Building new medical schools to train more doctors
c. Building new hospitals so that more sick people can be treated
d. Building many low-cost government housing projects to eliminate overcrowded and unsanitary living conditions

1. Which one of the programs above do you think the doctor should recommend?
2. Explain your answer.

ES 01-Core-7C

Explain what is meant by the term *component* in a book about systems.

ES 01-Core-8C

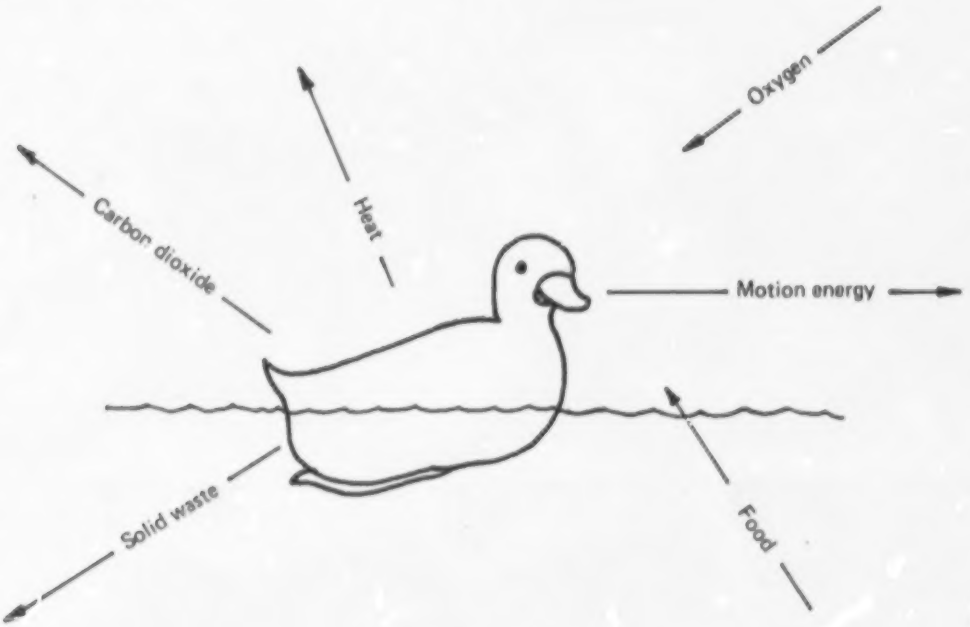
Consider a truck as a system. List three components of this system.

A forest and all the plants, animals, and things in it are often described as being a system. Define briefly what a system is as used in the sentence above.

ES
01-Core-9C

The diagram below shows a duck-air system. List any three labels which identify components of this system.

ES
01-Core-10C



Duck-Air System

Living things in the sea have been releasing their output of waste products into the sea for millions of years. Yet the concentrations of their output are not increasing. Explain why we do not find the concentrations of the output increasing in seawater.

ES
01-Core-11C

A dog can be thought of as one component of a system. In the list below are some things which are input and output of this component.

ES
01-Core-12C

a. Food
b. Urine
c. Water
d. Color
e. Heat
f. Teeth

1. Write the letters of two things which are input to the dog.
2. Write the letters of two things which are output from the dog.

Define the word *producer* as it is used in the following sentence. Elm trees are producers.

ES
01-Core-13C

ES
01-Core-14C

The word *consumer* is sometimes used to describe both mice and cats. What does *consumer* mean when used in this way?

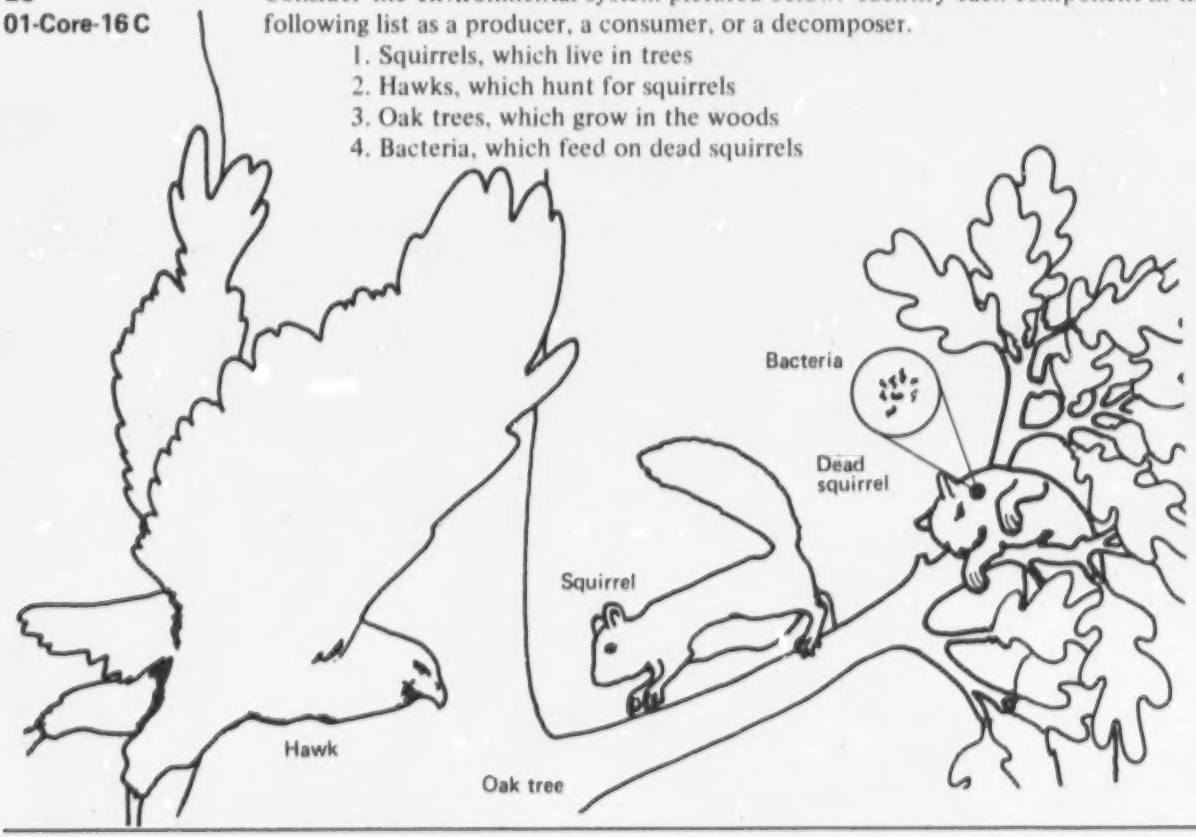
ES
01-Core-15C

Some organisms are called *decomposers*. What is meant by the word *decomposer*?

ES
01-Core-16C

Consider the environmental system pictured below. Identify each component in the following list as a producer, a consumer, or a decomposer.

1. Squirrels, which live in trees
2. Hawks, which hunt for squirrels
3. Oak trees, which grow in the woods
4. Bacteria, which feed on dead squirrels



Occasionally you see a person throw an empty cigarette package onto the street. A small crumpled-up package does not affect the environment very much. However, most cities have passed laws against littering. Why do governments pass laws that make a little thing like this illegal?

ES 01-Core-17C

A new, modern steel mill is to open. Mr. Schultz, the mill press officer, explains how all solid, liquid, and gaseous waste will be chemically treated before it is discharged so that it will not be harmful to the environment. In fact, Mr. Schultz made a statement to the press saying that the steel mill will be so well designed that it will not influence its surroundings at all.

1. Can Mr. Schultz's statement to the press be true?
2. Explain your answer.

ES 01-Core-18C

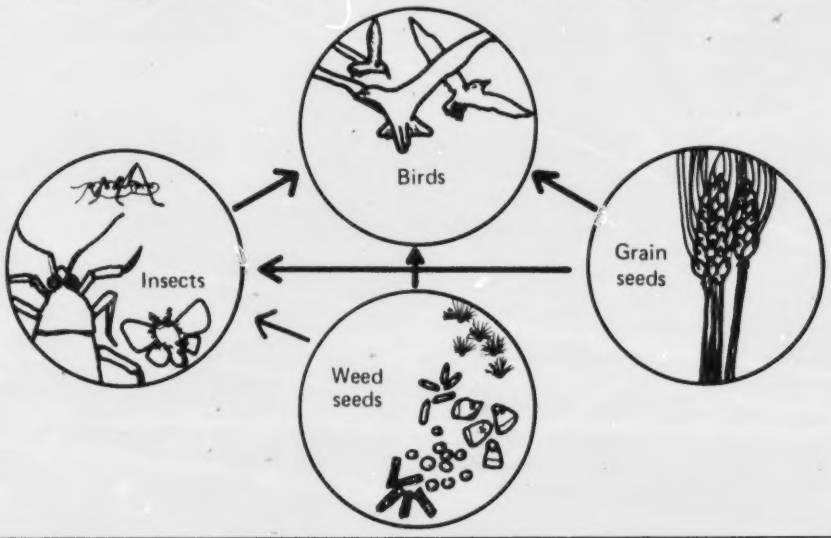
In the four cases below, decide whether the influence on the underlined living organism is direct or indirect. After the number of each case, write *direct* or *indirect*.

1. Trees die from lack of water because the area around them has been covered by concrete.
2. A city reduces the number of purple martins, which eat insects, when it drains nearby swamps to kill mosquitoes and other insects.
3. Young fruit trees die because in the winter their bark is eaten by rabbits.
4. A large city cuts down the pigeon population by poisoning the pigeons.

ES 01-Core-19C

The diagram below shows the food flow through a balanced system in a field. Predict what might happen if the birds were destroyed by the overuse of DDT.

ES 01-Core-20C



There is a large, almost unpolluted lake in central Florida. Most of its water comes from several rivers which drain into it. New paper mills are under construction upstream on three of these rivers. Give at least two ways in which the environment probably will be affected by pollution when the paper mills are built.

ES 01-Core-21C

ES
01-Core-22C

A TV commentator reported that the average person living in the United States has the same effect on the environment as 30 persons living in one of the nonindustrial nations of the world. Explain how this could be true.

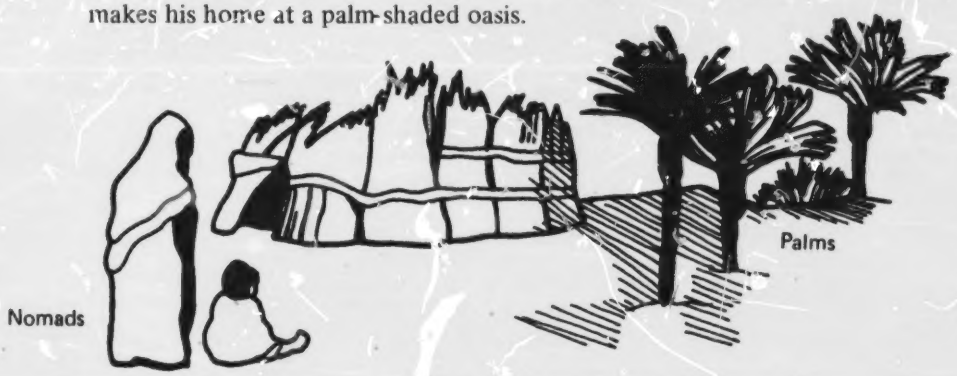
ES
01-Core-23C

Select the best answer. Which of the following will affect the environment?

a. An executive driving her car to work
b. A student pedaling his bicycle to school
c. A housewife doing the laundry
d. A flower blooming in the garden
e. All of the above

ES
01-Core-24C

Describe the input and output of gases in the system formed by living things and the atmosphere that surrounds them in the following situation. An Arabian nomad makes his home at a palm-shaded oasis.



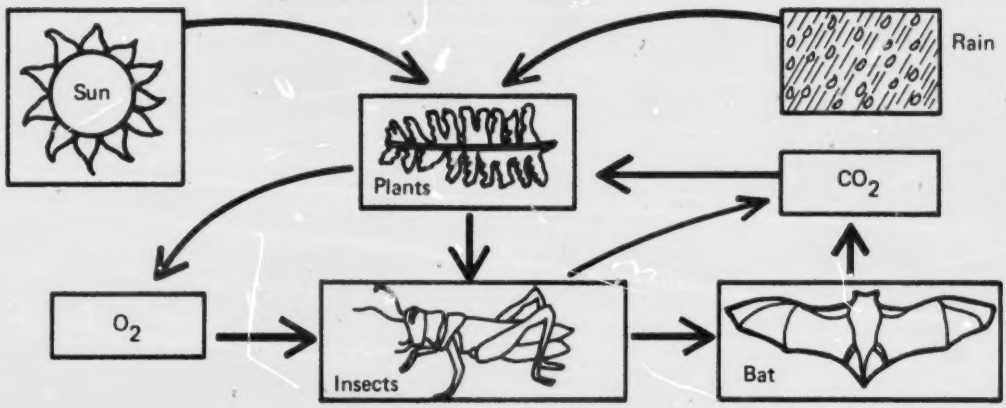
ES
01-Core-25C

List two things which are input to and three things which are output from the human body.

ES
01-Core-26C

The system pictured below is in balance.

1. What would happen to the insects in a period of drought when no water in the form of rain would be available for the plants?
2. Explain your answer.



Your teacher will observe you for this check when he can. **ES 01-Core-27C**

Your teacher will observe you for this check when he can. **ES 01-Core-28C**

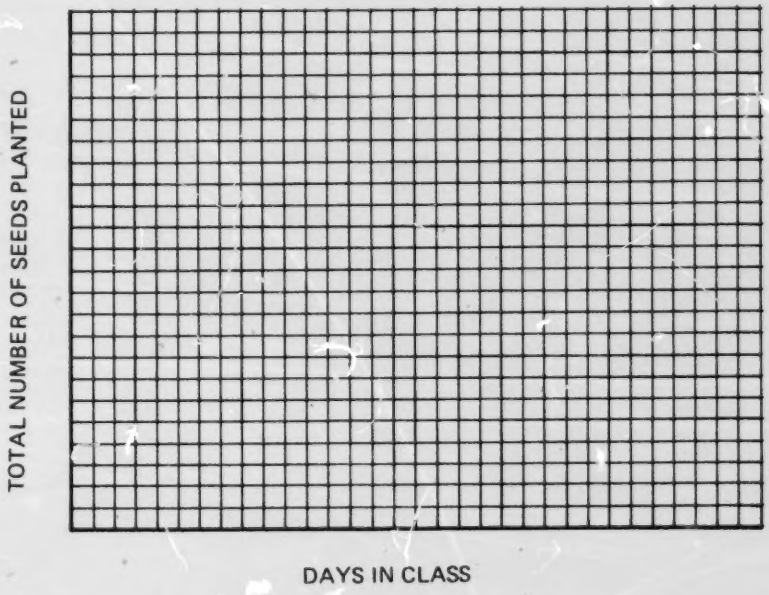
Your teacher will observe you for this check when he can. **ES 01-Core-29C**

Your teacher will observe you for this check when he can. **ES 01-Core-30C**

Your teacher will observe you for this check when he can. **ES 01-Core-31C**

The table below lists the total number of seeds planted by ISCS students during the first 30 days of classes. Get a partially labeled grid or an unlabeled grid from your teacher. If the grid is unlabeled, draw and label the axes as shown on the grid below. Put a suitable scale on each axis. Then plot the data, and draw the line of best fit. **ES 01-Exc 1-1-1C**

DAYS IN CLASS	TOTAL NUMBER OF SEEDS PLANTED
0	0
5	2
10	5
15	14
20	17
25	24
30	28

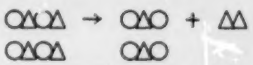


PbI_2 + $CuSO_4$ → K_2SO_4 + $CuCl_2$
(lead iodide) (copper sulfate) (potassium sulfate) (copper chloride)

ES 01-Exc 2-1-1C

1. Is the above reaction possible?
2. Explain your answer.

ES
01-Exc 2-1-2C



In the equation pictured above, assume that the symbols Δ and ○ represent different kinds of atoms. After the number of each term below, draw on your answer sheet the symbol or symbols taken from the equation above which illustrate the term.

1. Reactant
2. Product
3. Element
4. Compound

ES
01-Exc 2-1-3C

Judy is producing some hydrogen gas. The chemical reaction that she is using to produce the gas is

$$\underset{\text{(zinc)}}{Zn} + \underset{\text{(sulfuric acid)}}{H_2SO_4} \rightarrow \underset{\text{(zinc sulfate)}}{ZnSO_4} + \underset{\text{(hydrogen)}}{H_2}$$

Which of the following actions would not increase the rate at which hydrogen is produced?

a. Adding a catalyst
b. Increasing the concentration of H_2SO_4
c. Heating the substances that are reacting
d. Decreasing the concentration of Zn

ES
01-Exc 2-1-4C

Piles of dead leaves react with oxygen in the air in a process that is usually called *burning*. However, before the burning starts, the leaves must be heated. Explain why this heat energy is needed to start the burning process.

ES
01-Exc 2-1-5C

Match the letter of each definition below with the number of the term from the ISCS particle model to which it applies.

Terms	Definitions
1. Element	a. A new substance produced in a chemical reaction
2. Compound	b. A substance containing two or more different kinds of atoms
3. Product	c. A particle that contains equal numbers of positive and negative charges
4. Reactant	d. A starting substance in a chemical reaction
5. Ion	e. A substance containing only one kind of atom
6. Molecule	f. A particle with either excess positive charge or excess negative charge

Ernestine measured the temperature of two liquids, A and B. She then mixed the two liquids and measured the temperature again.

ES
01-Exc 2-1-6C

LIQUID	TEMPERATURE (in °C)
A	16
B	18
A + B	11

Select the statement below that best describes the relationship between the energy needed to separate the reactant particles and the energy released when those particles recombine to form products in the chemical reaction.

a. The heat needed to separate the reactant particles is greater than the heat released when those particles recombine to form products.
b. The heat needed to separate the reactant particles is less than the heat released when those particles recombine to form products.
c. The heat needed to separate the reactant particles is equal to the heat released when those particles recombine to form products.
d. From the information given, you cannot tell which energy is greater.

Men in a ranchers' association have spoken with a legislator about the problem of bobcats killing their sheep. They want a bounty on bobcats to encourage people to shoot them. Their argument is that the bobcats don't do anyone any good and killing them would let more sheep live. What information should the legislator try to get to help him make a decision?

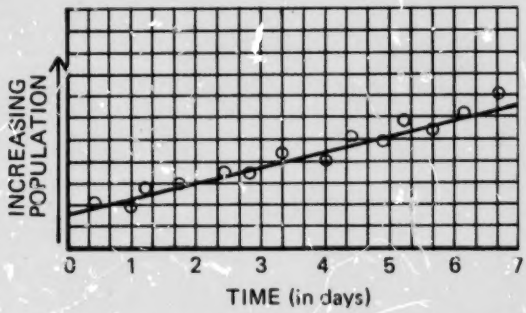
ES
01-Exc 2-2-1C

Give the meaning of the term *biochemical oxygen demand*.

ES
02-Core-1C

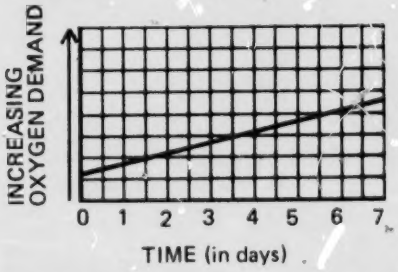
John measured the number of microorganisms in samples taken from a small lake twice a day for a week. A graph of his data is shown below.

ES
02-Core-2C

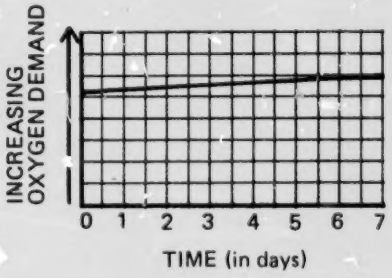


Which of the following graphs best shows the oxygen demand of this population of microorganisms?

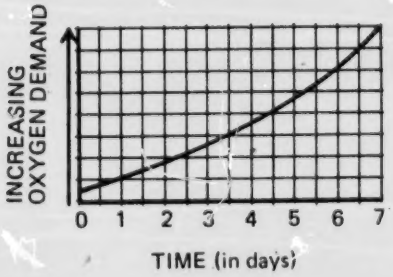
Graph a.



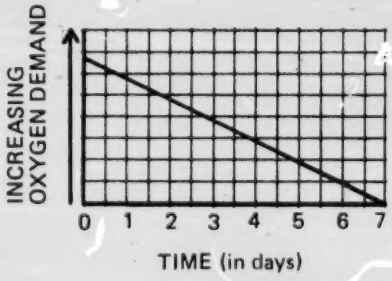
Graph b.



Graph c.



Graph d.



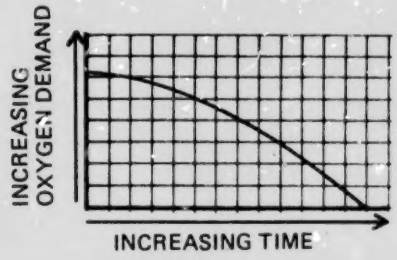
ES
02-Core-3C

Chris and Stephanie measured the amount of time it took for the blue color to disappear from test tubes containing yeast and milk. Chris claimed that the color change was caused by the milk. Stephanie claimed that it was the action of the yeast and milk together that caused the change. Describe an activity you could do to determine who is correct.

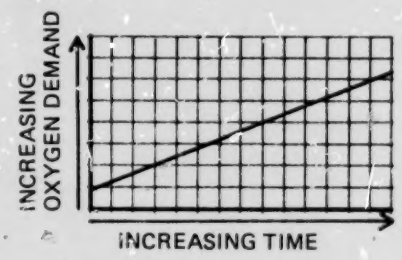
ES
02-Core-4C

Select the graph that best shows how the oxygen demand of a population of microorganisms changes with an unlimited food supply.

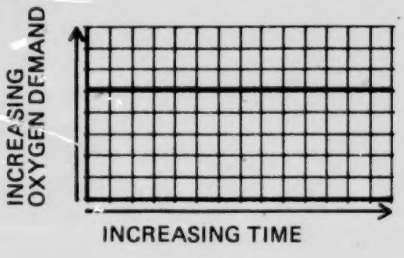
Graph a.



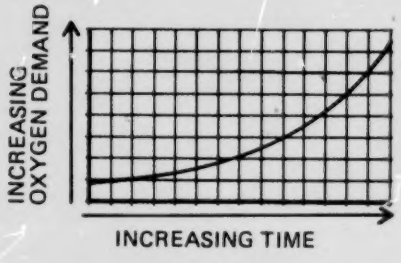
Graph b.



Graph c.



Graph d.



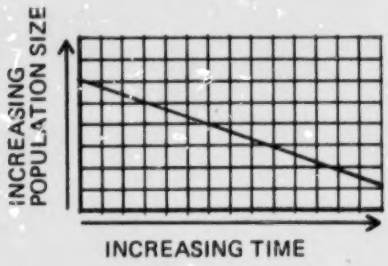
Sonnee put 8 yeast organisms into a large test tube full of warm milk. Under those conditions, it takes 10 minutes for each yeast organism to divide in two and become two yeast organisms. Predict the number of yeast organisms that will be in her test tube after 1 hour.

ES
02-Core-5C

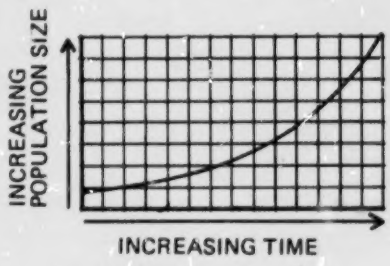
Rosie has put a few microorganisms into a bowl of beef gravy. There is enough beef gravy and oxygen available to support a very large population of the microorganisms. Select the graph below that best shows how the size of the microorganism population will change over the next few hours.

ES
02-Core-6C

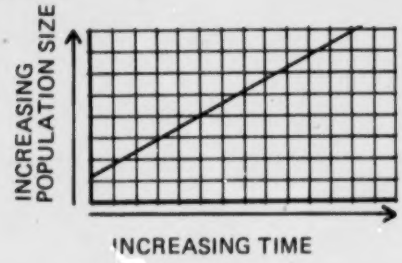
Graph a.



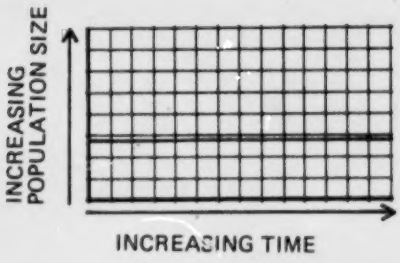
Graph b.



Graph c.



Graph d.



ES 02-Core-7C

At one end of Dog Lake is a small community which allows its sewage to flow into the lake. One day, a man from the community noticed that certain kinds of fish no longer lived in Dog Lake. The most probable reason is that

a. fishermen had fished that lake in such great numbers that most of the fish had been caught.
b. the sewage poisoned the fish.
c. the water contains too little oxygen.
d. the water stinks too much.

ES 02-Core-8C

What is a cause of the oxygen death of a lake or stream?

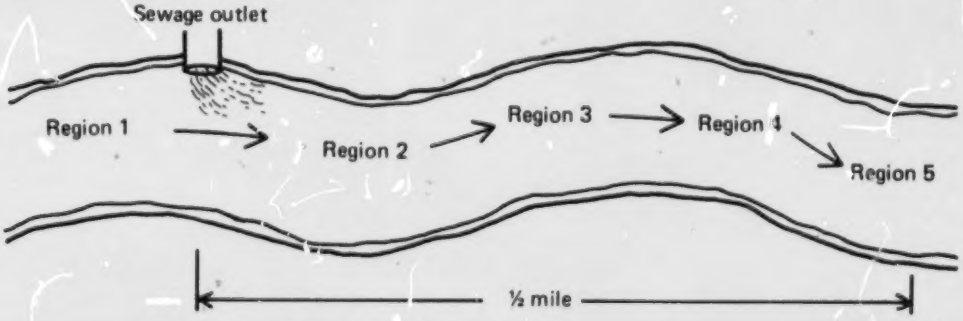
ES 02-Core-9C

Moon Lake has become filled with sewage and decomposers. A group of concerned citizens from the nearby community says that the decomposers have caused the lake to die. The group wants to spray it to get rid of all the decomposers.

1. Is this a good solution to the problem?
2. If so, explain why it is good. If not, suggest a better solution and explain why it is better.

ES 02-Core-10C

Tom completed a survey of the number of fish living in various parts of a slow-moving stream. He drew a diagram and table like the ones shown below.



REGION OF STREAM	NUMBER OF FISH
1	many fish
2	many fish
3	some fish
4	few fish
5	no fish

Use what you have learned about the decomposition of raw sewage and the needs of fish to explain Tom's observations.

The town councils of several towns that draw water from a nearby river have been told by an investigating team of scientists that the methods they are using to purify their drinking water are no longer good enough. As a result, the towns are building new water purification plants that use more effective methods to get the water "clean" enough for human use. Explain why the older, simpler methods of water purification no longer work.

ES 02-Core-11C

Jeff washed his dog every week in a tub outside the house next to a new flower bed where his mother had planted seeds. After several weeks he noticed that the area of the bed that got splashed by the wash water had put up fewer seedlings than the rest. Those plants looked less healthy than the other plants. What probably is the cause of these differences?

ES 02-Core-12C

Mr. Zane's science class wanted to investigate the effect of detergent on the germination rate of different seeds. His class used bean, tomato, pea, and cucumber seeds. Based on your work with radishes, select the best prediction below that you can make about the results of their activities.

a. None of these seeds will show a lower germination rate because the detergent affects only radish seeds.
b. I have no basis for predicting how the detergent will affect other seeds.
c. All of the seeds will have a lower rate of germination, just like my radish seeds.
d. I think that the detergent will cause a lower germination rate, but I am not sure because I tested only radish seeds.
e. I can't predict how the activities will turn out because detergent affects only root crops, such as radishes, beets, turnips, and carrots.

ES 02-Core-13C

Often farmers will spray their fields with insecticides to try to kill the harmful insects. Experiments with some of these insecticides show that they remain in the soil for several years. Describe an activity that you could do to determine whether the insecticide Debug 44 will affect the germination of corn seeds.

ES 02-Core-14C

The solid wastes of fish are biodegradable. What does *biodegradable* mean?

ES 02-Core-15C

A large chemical plant has begun to dump biodegradable chemicals into a nearby lake. There has been a rapid drop in the amount of dissolved oxygen in the lake. Describe how the biodegradable chemicals can cause the rapid decrease of dissolved oxygen in the lake.

ES 02-Core-16C

ES
02-Core-17C

The fact that a product is biodegradable is not a guarantee that it will not pollute a stream. Which of the following best states how a biodegradable substance can cause pollution?

a. It will accumulate in the water.
b. It can decompose waste products of the plants and animals in the water.
c. It can be broken down into simpler substances by living organisms.
d. It may be a food source for organisms in streams which will, in turn, become overpopulated.

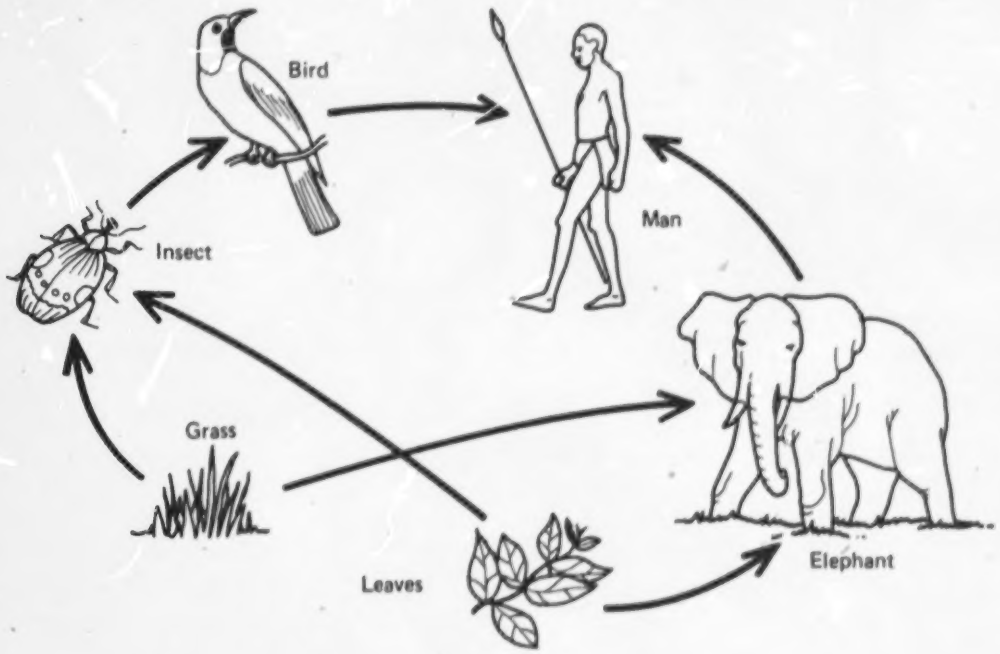
ES
02-Core-18C

Consider the following situation.

Chris Howard, a lettuce grower, sprays his crops with a nonbiodegradable pesticide. Since he is very careful to spray only when there is no breeze, he says that the wildlife in and around a pond down the hill is not affected by his spraying.

1. Is Chris correct?
2. Defend your answer.

ES
02-Core-19C



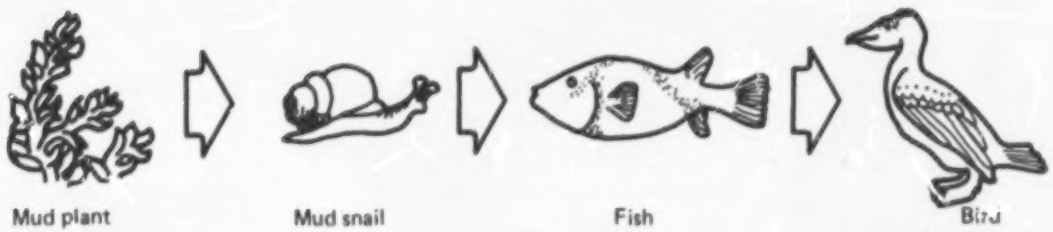
1. State the term used for the system shown above.
2. Explain what the arrow between insect and bird in the diagram means.

ES
02-Core-20C

A chemist from a certain factory that puts large quantities of a nonbiodegradable waste into a river tested the water several miles downstream. He found less of the chemical in the water. State two reasons which account for the disappearance of some of this chemical from the water.

The diagram below shows part of a food chain in a freshwater lake and its surroundings. The lake has been polluted with NDT, a nonbiodegradable chemical that accumulates in the body of living organisms. **ES 02-Core-21C**

1. In which type of organism would you expect to find the highest concentration of NDT?
2. In which type of organism would you expect to find the lowest concentration of NDT?



Some widely used detergents can be decomposed by living organisms and are a huge source of food for them. The population of these organisms increases so greatly that their waste products become serious pollutants. Other detergents which are not easily decomposed can accumulate and kill organisms. What would be the characteristics of the ideal detergent? **ES 02-Core-22C**

Take your *Record Book* to your teacher. Your task is either to defend your written response to Problem Break 4-4 or 4-5 or to make a satisfactory change in any part of it that your teacher questions. **ES 02-Core-23C**

Eggs undergo a slow chemical reaction during storage. Fresh, uncooked eggs are kept in a refrigerator rather than out in the warm air. Why does storing an uncooked egg in the refrigerator keep it fresh longer? **ES 02-Core-24C**

Trudy measured the body temperatures of three different animals. She then changed the temperature of their surroundings, waited two hours, and measured their body temperatures again. Her data are shown below. **ES 02-Core-25C**

TEMPERATURE OF SURROUNDINGS (in °C)	BODY TEMPERATURE (in °C)		
	Animal 1	Animal 2	Animal 3
40	25	41	39
25	25	26	24

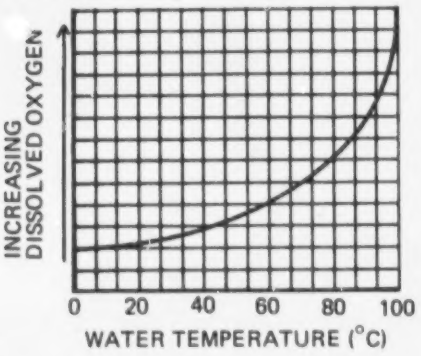
Indicate whether each of the animals is warm-blooded or cold-blooded.

ES 02-Core-26C	In the body of a frog, chemical reactions occur which release energy to the frog. Frogs are cold-blooded animals. A frog cooled in a refrigerator for several hours moves very slowly if at all. Yet on a warm day, frogs react quickly and with great leaps. Use what you have learned to explain why this is true.
ES 02-Core-27C	State the meaning of the term *thermal death point*.
ES 02-Core-28C	Larry decided to sell some of the tropical fish he had just bred. He put the fish and some of their water into a plastic bag to transport them to the aquarium shop. He knew there was enough oxygen in the bag to keep the fish alive at least five hours. On the way to sell his fish, Larry stopped for some ice cream because it was such a hot day. When he returned to his car and unlocked it about an hour later, he found that all the fish had died. Explain what might have caused the fish to die.
ES 02-Core-29C	Doug stocked his aquarium with silversides and gizzard shad. Both fish have nearly the same preferred temperature range. One morning he woke up to find that all the silversides had died. The thermostat on the aquarium heater had stuck, and by morning the water was quite warm. Explain why one kind of fish died, but the other did not.
ES 02-Core-30C	Mr. Burras uses pesticides to keep the insects off his cotton crop. Usually, however, only certain kinds of insects are killed. Explain why only certain kinds of insects die rather than all the insects in the area.
ES 02-Core-31C	Patsy went fishing during May. She caught a lot of northern pike by fishing the weed beds in shallow water near the shore. In July, she tried the same spots and had no luck there, but she found that the pike were being caught in areas where the lake was deepest. Select the most likely reason below for this. a. The sun was brighter in July, so the fish swam down to where the light didn't hurt their eyes. b. So many pike were caught in shallow waters that the rest decided to swim down deeper where it was safer. c. The pike had been in the weed beds in May because they were looking for food. d. The surface water had warmed up, so the fish swam deeper until they found water in their preferred temperature range.
ES 02-Core-32C	Salmon survive best in water that contains large amounts of dissolved oxygen. 1. Would you expect salmon to live in cold water or warm water? 2. Explain the reason for your answer.

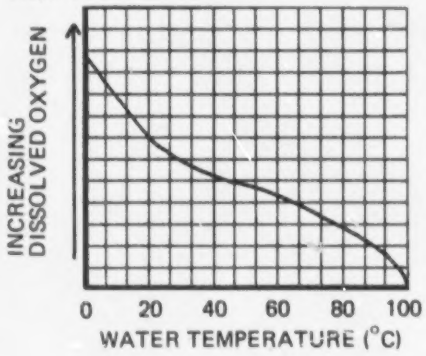
Select the graph below that best shows how the temperature of water affects the amount of oxygen gas that will dissolve in water.

ES
02-Core-33C

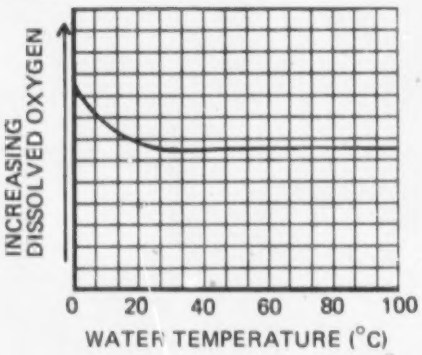
Graph a.



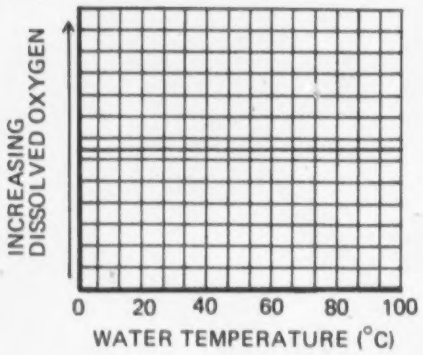
Graph b.



Graph c.



Graph d.



Richard keeps two fish tanks in his apartment. The only difference between the tanks is that one is 10° cooler than the other. Both tanks have air bubbled into them.

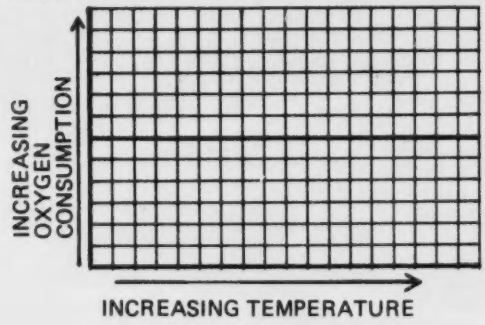
ES
02-Core-34C

1. If an accident were to cut off the supply of air to both of the tanks, would the fish survive longer in the warm or the cool tank?
2. State two reasons for your prediction.

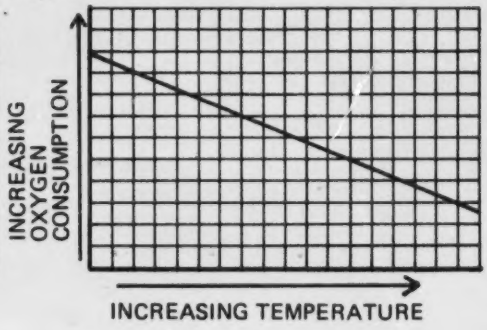
ES
02-Core-35C

Theresa wants to find out how fast snails, which are cold-blooded, use oxygen. She measures the rate of oxygen consumption at different temperatures. Select the graph that best shows how you would expect the rate of oxygen consumption to depend on temperature.

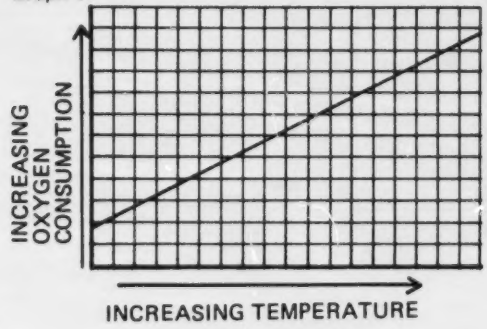
Graph a.



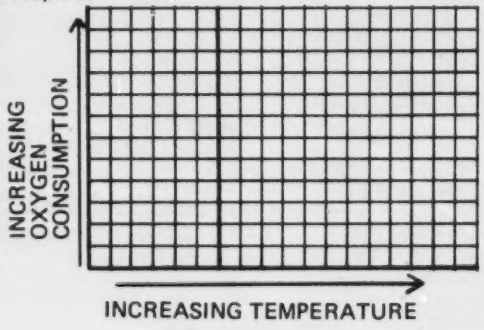
Graph b.



Graph c.



Graph d.



ES
02-Core-36C

Give the meaning of the term *thermal pollution*.

Which of the following is not a result of thermal pollution? **ES**
02-Core-37C

a. The biochemical oxygen demand of living organisms increases.
b. Some fish may be driven away because the water temperature is no longer within their preferred temperature range.
c. The rate at which sewage is decomposed by microbes living in the water is slowed.
d. Some fish may be killed because the water temperature is above their thermal death point.
e. The amount of oxygen that can be dissolved in the water decreases.

A manufacturing plant receives permission to release untreated chemical pollutants into a river one week a year. The company explains that during 51 weeks out of the year its output meets federal antipollution standards. But one week a year, as it flushes out its tanks for cleaning, it cannot adequately treat the discharge. The company says this one week of pollution is perfectly all right because it is permitted only for a short time. **ES**
02-Core-38C

1. Is this sensible reasoning?
2. Explain your answer.

Parts of Ohio have the same amount of precipitation as parts of Oregon. However, the vegetation is not the same in the two similar precipitation areas. In Ohio, there are no large forests. But Oregon has great forest areas. List three factors which could explain these differences in vegetation in areas which have the same amount of precipitation. **ES**
02-Exc 3-1-1C

Recently, several disputes have arisen between the people in Northern California and the people in Southern California about the amount of water which will be permitted to flow from the northern part of the state to the southern part of the state. **ES**
02-Exc 3-1-2C

1. Why weren't there as many arguments about the water flow thirty years ago?
2. Explain why some people think that these disputes about the water flow will continue and become even more serious in the future.

The rate at which trees lose water to the atmosphere is about twenty times greater than grass. Both trees and grass are used to prevent soil erosion. A hilly area surrounding a new housing project is to be planted, but the amount of water in the ground is slightly low. **ES**
02-Exc 3-1-3C

1. As the mayor of this new community, would you recommend planting grass only, trees only, or both trees and grass?
2. Explain your answer.

ES **02-Exc 3-1-4C**	Start with component number 4 below. Arrange the other components by number into the system known as a water cycle to show the order in which they occur. 1. Water in a lake 2. Precipitation 3. Evaporation 4. Water runoff in a drainage ditch
ES **02-Exc 4-1-1C**	Paul is going to investigate the growth of bean plants. He needs to define *plant growth* operationally. Give two operational definitions for *plant growth*. In other words, give two ways to detect and to measure the growth of Paul's plants.
ES **02-Exc 4-1-2C**	It has been proposed by some people that plants grow better in surroundings that include classical music. Describe an experiment that you could do to investigate whether classical music has an effect on the rate of germination and the growth of the seeds which germinate. Be sure to state which variables should be held constant and which should vary.

David Schiffli claims that he doesn't contribute to the air pollution problem. He never burns leaves or trash, he has sold his car, and he travels to and from work, using the city's electrically powered rapid transit system.

ES
03-Core-1C

1. Is David correct in assuming that he doesn't contribute to the air pollution problem?
2. Explain your answer.

The biggest factory in Industryville has always been considered a major source of air pollution because of the black smoke issuing from its smokestack. Recently a filtering system was installed that collects the solid particles as they travel up the smokestack. Now the sky above the stack is always clear.

ES
03-Core-2C

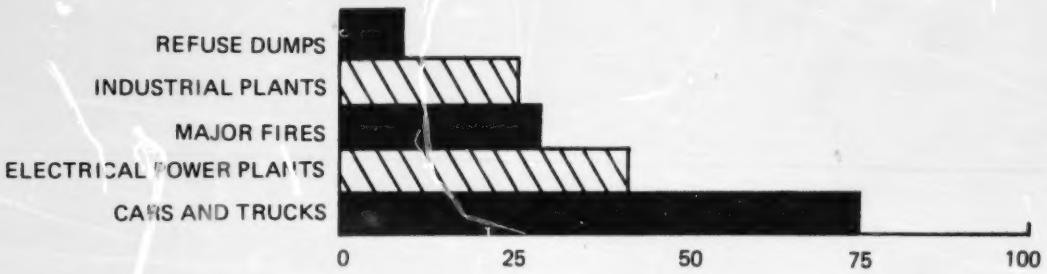
1. Does this factory no longer contribute to air pollution?
2. Explain your answer.

In Chapter 6, you used a piece of sticky tape to study solid-particle air pollution. Write an operational definition for *solid-particle air pollution,* using the sticky-tape method.

ES
03-Core-3C

Consider the size of refuse dumps, industrial plants, major fires, electrical power plants, and cars and trucks. How do you explain the fact that cars and trucks, which individually are so small, produce the greatest amount of pollution? (See the bar graph.)

ES
03-Core-4C



The substances listed below are products of combustion. Which one is not considered to be a major pollutant?

ES
03-Core-5C

a. Smoke
b. Carbon dioxide
c. Nitrogen oxides
d. Unburned hydrocarbons
e. Carbon monoxide

ES 03-Core-6C

Select the answer that best indicates the possible effects of air pollution.

a. Damages buildings
b. Causes paint to peel
c. Kills or weakens animals
d. Discolors clothes
e. All of these

ES 03-Core-7C

Keri: The cost to industry for equipment to remove the pollutants from its output would be very great.

Jo: True, but the cost of not removing the pollutants is also high.

Keri: What? How can not spending money to remove pollutants cost money?

On your answer sheet, write a good response for Jo. Include at least two examples of how releasing pollutants can be expensive.

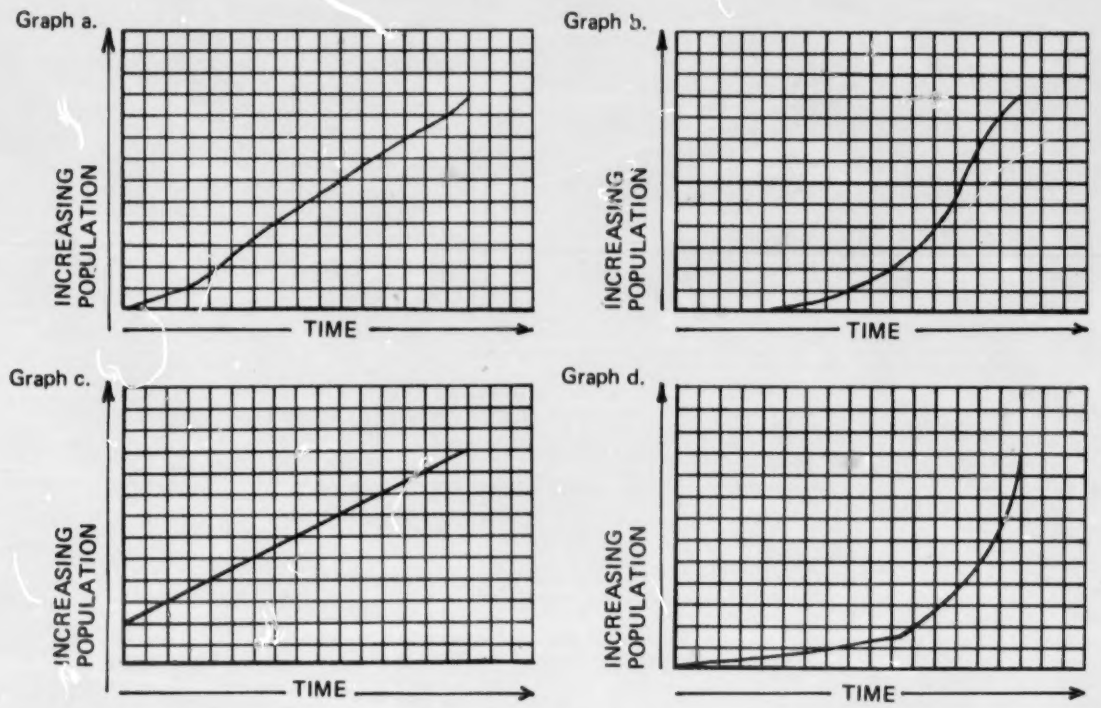
ES 03-Core-8C

Mr. Martinez is upset about the extent of air pollution in the big city where he lives. He decides to move out to the country to escape all the air pollution.

1. Will he escape air pollution by moving to the country?
2. Explain your answer.

ES 03-Core-9C

Which of the following graphs shows the greatest population explosion?



ES
03-Core-10C

Lee raises guinea pigs in the garage. Over the years, his guinea pig population has grown considerably. His mother has laid down the law! If his guinea pig population gets any larger, she will make him get rid of all his guinea pigs.

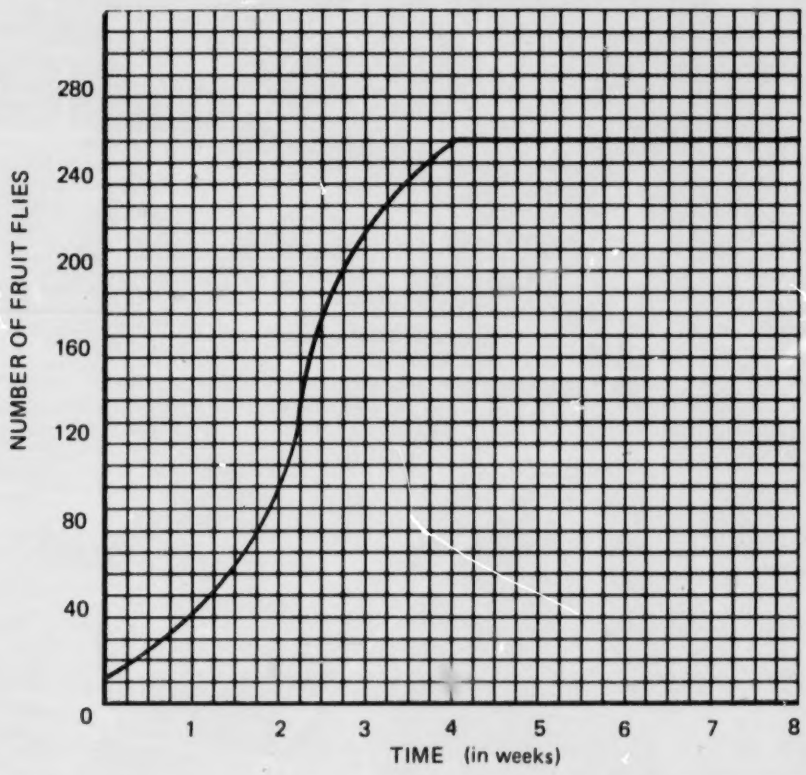
By answering the questions below, show how births must be related to deaths to keep the population constant. Assume that no guinea pigs are sold, are given away, or escape.

1. How many deaths must there be in 1975 to result in a constant population?
2. How many births can there be in 1976 to result in a constant population?

YEAR	1972	1973	1974	1975	1976
Population at end of year	63	118	183	183	183
Births	54	82	133	148	?
Deaths	3	38	61	?	56

ES
03-Core-11C

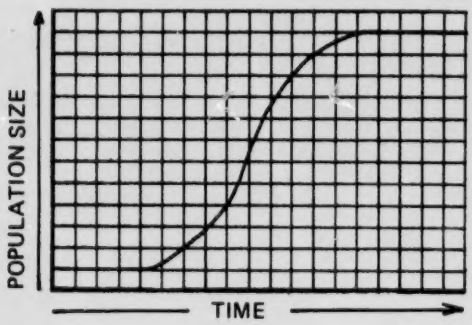
Eli kept a culture of fruit flies for several months. He added the same amount of food each day. Every week he counted the number of live flies. Then he drew the graph shown below. At what point in time is the number of deaths in the population equal to the number of births?



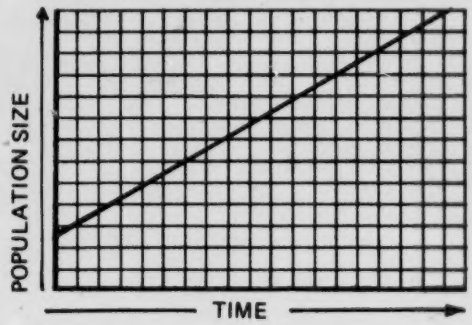
ES 03-Core-12C

Which graph below best indicates how populations of plants and animals change with time?

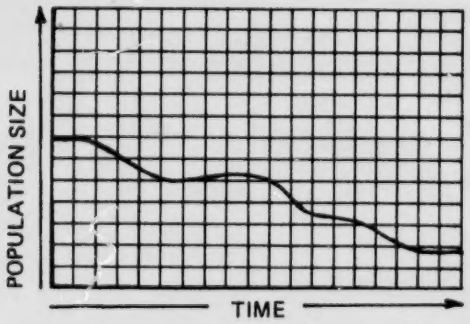
Graph a.



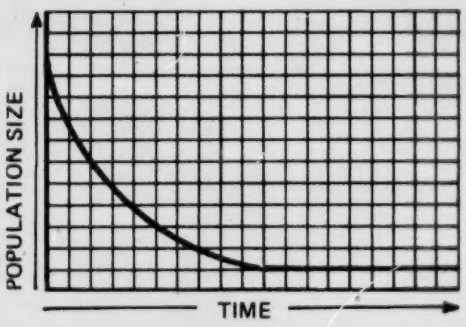
Graph b.



Graph c.



Graph d.



ES 03-Core-13C

List four variables that could limit the size of a nonhuman population.

ES 03-Core-14C

Before 1700, the number of people in the world increased very slowly. After 1700, the population increased rapidly. What variables, if any, has man learned to control or change that have allowed the human population to increase so rapidly since 1700?

ES 03-Core-15C

Take your *Record Book* to your teacher. Your task is either to defend your written response to Problem Break 8-1 or Problem Break 8-3 or to make a satisfactory change in any part of it that your teacher questions.

ES 03-Core-16C

Take your *Record Book* to your teacher. Your task is either to defend your written response to Problem Break 8-2 or to make a satisfactory change in any part of it that your teacher questions.

Consider the following information about the world's population.

ES
03-Core-17C

Present world human population = 3,833,000,000
Birthrate = 364,000 per day
Death rate = 198,000 per day

Assuming that the birthrate and the death rate stay constant, how many days will it take for the world's population to reach 3,836,000,000? Show your calculations.

ES
03-Core-18C

Birthrate (per day)	311,000 (high)
Death rate (per day)	138,200 (low)

The current world birthrate and death rate are shown above. This situation must change if the population is to stop increasing. Shown below are two possible conditions which would result in a constant population.

	CONDITION I	CONDITION II
Birthrate (per day)	311,000 (high)	138,200
Death rate (per day)	311,000	138,200 (low)

1. Which would be more desirable – Condition I, which has an increased death rate, or Condition II, which has a decreased birthrate?
2. Explain the reasons for your answer.

How are temperature inversions related to increase in air pollution at the earth's surface?

ES
03-Exc 6-1-1C

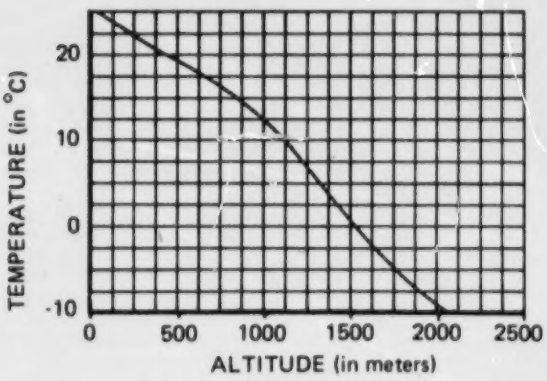
Give a major cause of temperature inversions.

ES
03-Exc 6-1-2C

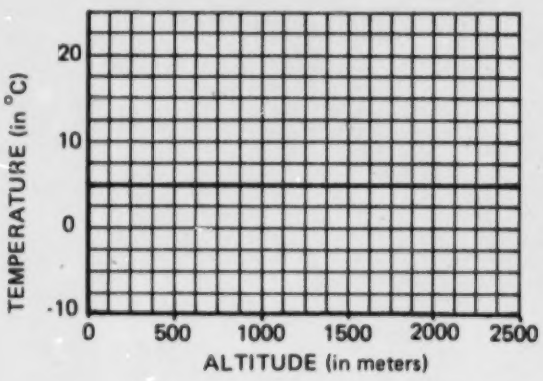
ES
03-Exc 6-1-3C

1. Which graph below shows the normal way temperature changes as altitude increases?
2. Which graph below shows the way the temperature changes with altitude during a temperature inversion?

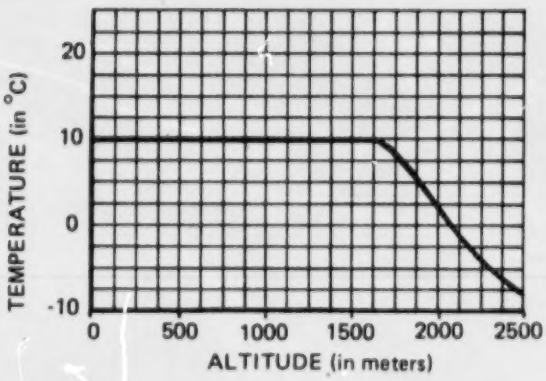
Graph a.



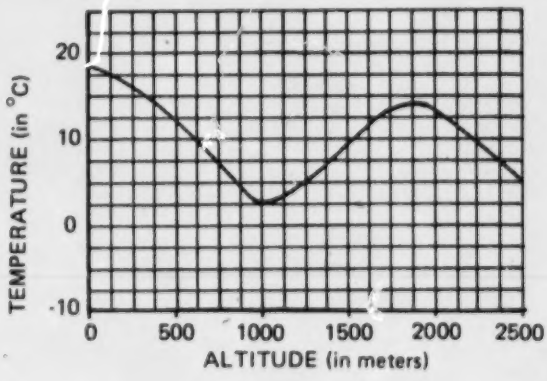
Graph b.



Graph c.



Graph d



ES
03-Exc 7-1-1C

Which of the following variables directly influence the size of the population in any country?

a. The number of cars
b. The number of libraries
c. The emigration rate
d. The number of storks
e. The death rate

Lucy was doing a population study of rats. She used three different sets of experimental conditions, as shown below.

ES
03-Exc 7-1-2C

EXPERIMENTAL CONDITION	FOOD SUPPLY	EMIGRATION
I	limited	allowed
II	unlimited	not allowed
III	limited	not allowed

Four possible experimental results for each of these experiments are shown below.

EXPERIMENTAL RESULT	BIRTHRATE vs DEATH RATE
a	lower birthrate and equally low death rate
b	lower birthrate and a higher death rate
c	higher birthrate than death rate
d	a high birthrate which is equalled by the death rate

1. Based on the results of Dr. Emlen's experiments with mice, which of the experimental results (a, b, c, or d) shown above would you predict Lucy will get for experiment I?
2. For experiment II?
3. For experiment III?

Suppose that the two following new planets have been discovered.

ES
03-Exc 7-2-1C

PLANET	TEMPERATURE RANGE (in°C)	ATMOSPHERIC COMPOSITION
Outasite	-90 to -15	oxygen and nitrogen
Outamind	-20 to 75	nitrogen and carbon dioxide

1. Would either of these planets be suitable for human habitation without support equipment?
2. Explain the reasons for your answer.

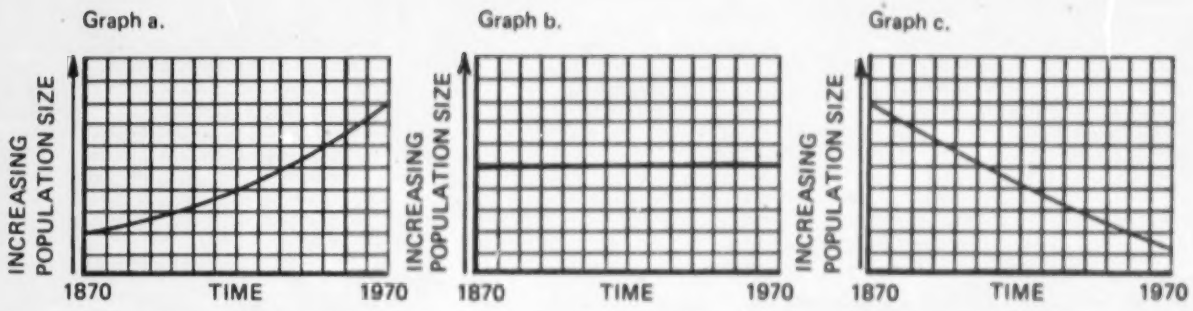
ES
03-Exc 7-3-1C

Each of the graphs below was drawn for the population of a different country. Match the appropriate graph to the approximate average family size in that country. Assume that no change in the life span of the individual occurred between 1870 and 1970.

Family Size

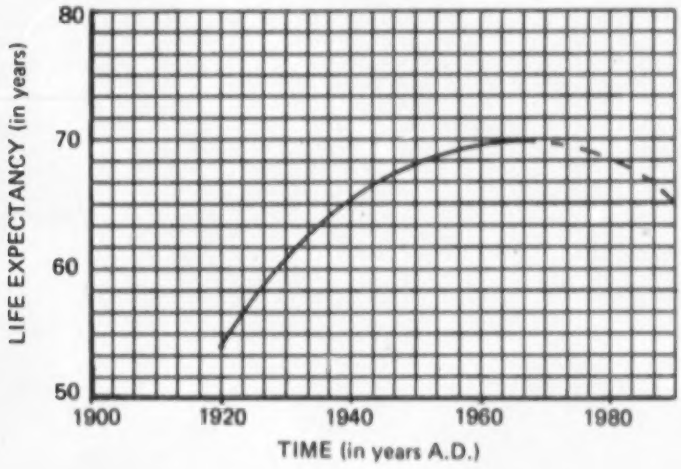
1. The average family had fewer than two children.
2. The average family had exactly two children.
3. The average family had more than two children.

Population Curve



ES
03-Exc 7-3-2C

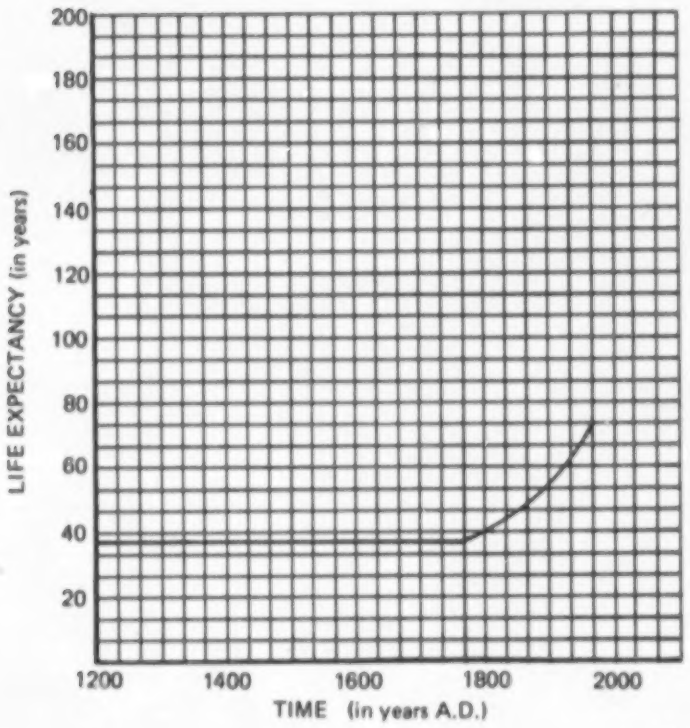
The solid line on the graph below shows how human life expectancy has changed in the U.S. since 1920. The dotted line shows one prediction of how it will change during the next few decades.



What could cause a decline in life expectancy during the next twenty years?

The graph below shows how life expectancy has changed since 1200 A.D.

ES
03-Exc 7-3-3C



1. Use this graph to predict the life expectancy in 2100 A.D.
2. Explain why your prediction is likely to be inaccurate.

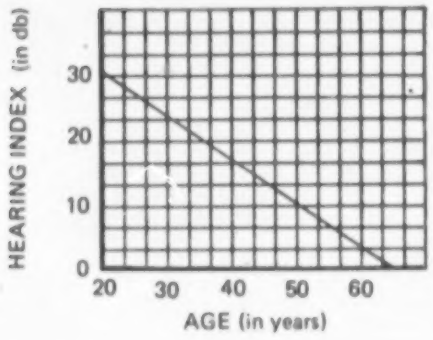
Archie works in a steel mill. As he drives to work, he listens to the car radio. He leaves the radio switched on, and it comes on when he starts the car. Therefore, the volume is the same when he starts the car to go home after work as it was that morning. He has noticed that to hear the radio he has to turn the volume up after work and then turn it down again the next morning because it sounds too loud. Explain what might be causing this daily change in Archie's hearing.

ES
03-Exc 8-1-1C

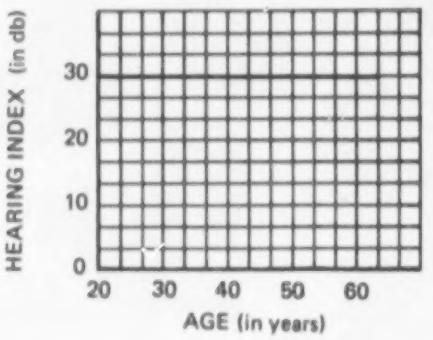
ES
03-Exc 8-1-2C

Robert wanted to measure how people's hearing changed with age. He measured the hearing index of a number of people. He operationally defined *hearing index* as the decibel level of the quietest sound that the person could hear. Which of the graphs below shows how the hearing index, as Robert defined it, usually changes with age?

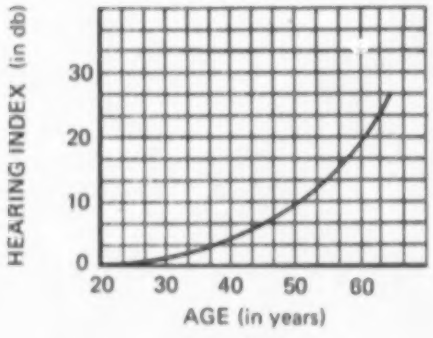
Graph a.



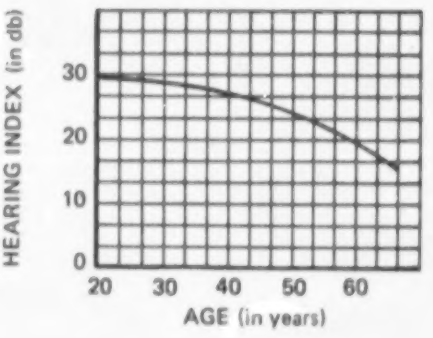
Graph b.



Graph c.



Graph d.



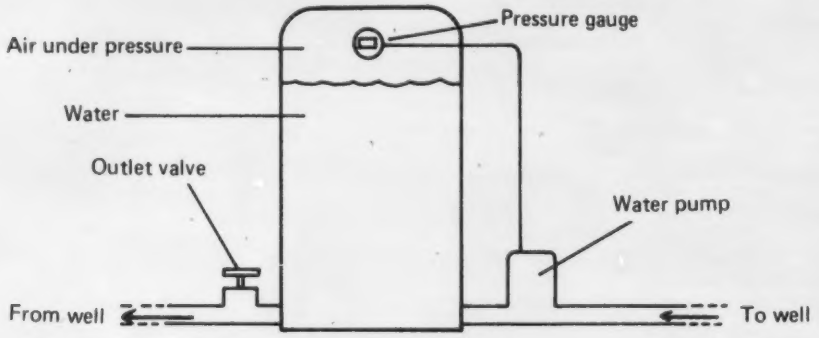
Well-Being **WB**

Ed says a furnace and a thermostat make up a system. What is meant by the word *system?*

WB
01-Core-1C

The section of a farm's water system shown below can be thought of as a system.

WB
01-Core-2C

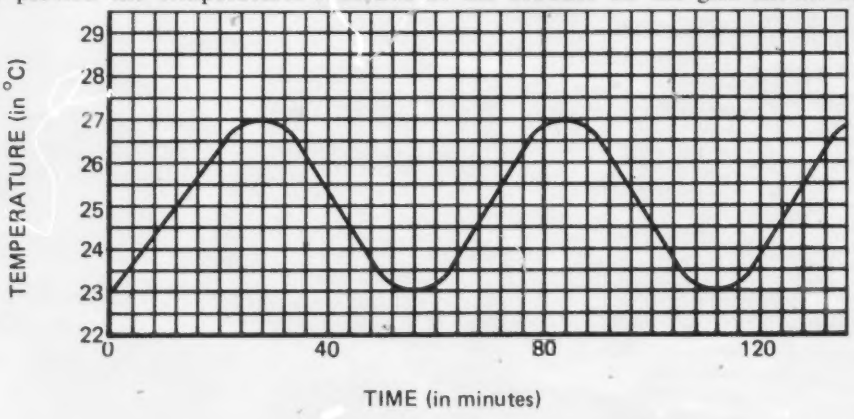


The water level drops in the water tank as water flows out through the outlet valve when it is opened. As the water level drops, so does the pressure on the air and the pressure gauge. When the pressure drops to a minimum, the gauge switches the pump on. The pump then pumps water into the tank. The water level rises, the air pressure increases until it reaches a certain point, and the pressure gauge switches the pump off.

1. Identify the stimuli and responses that make this a negative feedback system.
2. State how they work to make this a negative feedback system.

Bonnie measured the temperature inside a brooder, a device to keep baby birds warm. She plotted the temperatures recorded in the brooder on the grid shown below.

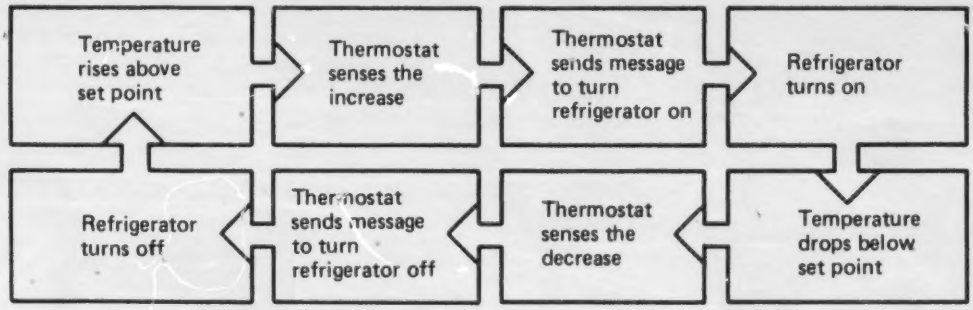
WB
01-Core-3C



At what temperature (set point) is the thermostat set to control the temperature of the brooder?

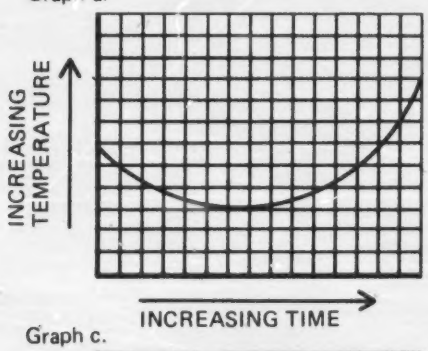
WB
01-Core-4C

A thermostat is used to regulate the temperature inside a refrigerator. The diagram below shows how a refrigerator-thermostat system works.

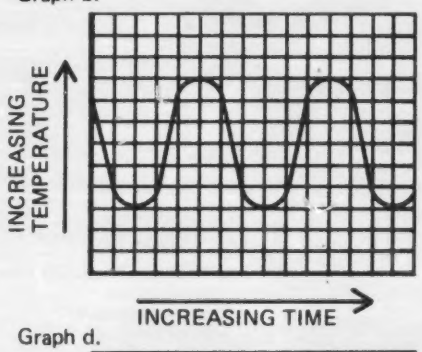

Temperature rises above set point
Thermostat senses the increase
Thermostat sends message to turn refrigerator on
Refrigerator turns on
Temperature drops below set point
Thermostat senses the decrease
Thermostat sends message to turn refrigerator off
Refrigerator turns off

Write the letter of the graph that best shows how the temperature changes inside a closed refrigerator.

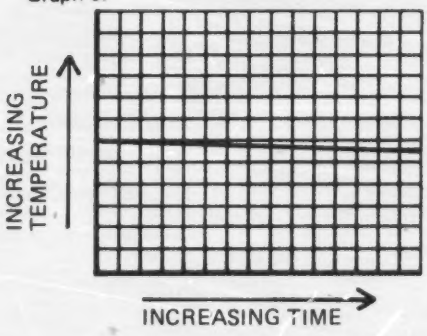
Graph a.



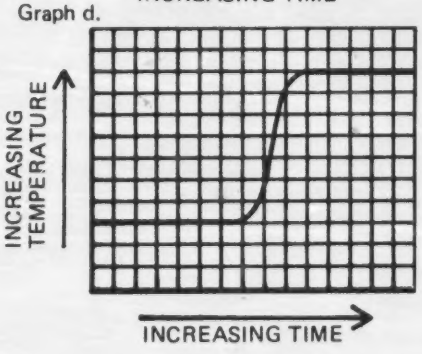
Graph b.



Graph c.



Graph d.



WB
01-Core-5C

Suppose that the thermostat used to control the temperature in the principal's office gets broken in January.

1. Predict one thing that might happen to the room temperature if this occurred.
2. Explain why it would happen.

The formula used to calculate the amount of heat needed to change the temperature of water is

WB 01-Core-6C

calories = mass (grams) of water X change in temperature (°C).

How many calories of heat are needed to raise the temperature of 590 grams of water from 24°C to 39°C? Show your calculations.

State an operational definition of *calorie*.

WB 01-Core-7C

How many calories equal 1 Calorie?

WB 01-Core-8C

Select the statement that best indicates what happens in the body to the energy in food which has been eaten.

WB 01-Core-9C

a. The energy is either used to do work or stored as fat that can be used as an energy source between meals.
b. All of the energy is used to keep the body at a constant temperature.
c. Most of the energy is used in doing work; the rest is used to keep the body at the correct temperature.
d. The energy is used to keep the body temperature constant and to do work; any that is left over is stored as fat.
e. Some of the energy is used to keep the body warm, and the rest is used to do work.

Donny wants to lose some weight without taking drugs. What are two different ways he can do this?

WB 01-Core-10C

Felice wants to lose 8 pounds. She has adjusted her diet so that her food energy input is 1,900 Calories per day. Her body requires 2,400 Calories each day for doing work and for temperature control. How long will it take her to lose 8 pounds? Show all your calculations. (Note: A pound of body fat represents about 3,500 Calories of stored energy.)

WB 01-Core-11C

Elsie heard of a diet plan in which the dieter ate only one kind of food. Her doctor insisted that a good diet plan includes eating a variety of different foods such as leafy vegetables, meats, yellow vegetables, and fruit. Why do doctors stress eating many different kinds of food when dieting, as well as decreasing the total food intake?

WB 01-Core-12C

Your teacher will observe you for this check when he can.

WB 01-Core-13C

WB **01-Core-14C**	Your teacher will observe you for this check when he can.
WB **01-Core-15C**	Your teacher will observe you for this check when he can.
WB **01-Core-16C**	Your teacher will observe you for this check when he can.
WB **01-Core-17C**	Your teacher will observe you for this check when he can.
WB **01-Exc 1-1-1C**	Which of the following is used to measure units of heat energy? a. temperature b. gram c. calorie d. degree e. millimeter
WB **01-Exc 1-1-2C**	In Excursion 1-1, you found that a single burning peanut gave off more heat than five burning marshmallows. Select the best possible conclusion that you could draw from this activity. a. I cannot predict whether all foods give off different amounts of heat energy when burned because I tested only marshmallows and peanuts. b. Other foods probably give off differing amounts of heat energy when burned, but I cannot be sure because I tested only peanuts and marshmallows. c. All foods give off the same amount of heat energy when they are burned. d. All foods contain different amounts of heat energy.
WB **01-Exc 1-1-3C**	Oliver carried out an activity in which he found that five burning marshmallows released 3,280 calories. How many Calories is this?
WB **01-Exc 1-2-1C**	Suppose you were trying to reduce the number of calories you consume. Which one of the following foods would it probably be best for you to avoid? a. Peanut butter, which contains a lot of fats b. Lean steak, which is mostly protein c. Baked potatoes, which are mostly starch

1. Eggplant may be prepared in several ways. Which method of preparation gives you the largest number of Calories? **WB 01-Exc 1-2-2C**
   a. Fried eggplant
   b. Boiled eggplant
   c. Baked eggplant
   d. No difference
2. Explain your answer.

Jeff says his coach put him on a well-balanced diet. **WB 01-Exc 1-2-3C**

1. Does this mean only that he is counting Calories?
2. Explain your answer.

Dennis has kept track of the amount of time he spent doing various activities. Part of his activity chart is shown below. What is the total number of Calories he used doing those activities? Show your work. **WB 01-Exc 1-3-1C**

ACTIVITY	TIME (in hours)	CALORIES USED (per pound of body weight per hour)	BODY WEIGHT (in pounds)
Sleeping	8	0.2	140
Walking	2	0.9	140

Not long ago you put a solution of cigarette smoke on corn seeds to test its effect on the seeds' germination. You were asked to use a control. Why are controls necessary when doing such activities?

WB 02-Core-1C

Name three different chemicals or types of chemicals that scientists have found in cigarette smoke.

WB 02-Core-2C

The diagrams below show the epithelial tissue from the windpipes of three different people. One person is a heavy smoker, one smokes a moderate amount, and one is a nonsmoker. Match the letters of the proper diagrams below with the numbers of the labels.

WB 02-Core-3C

Types of Smokers

1. Moderate smoker
2. Nonsmoker
3. Heavy smoker

Diagrams of Tissue

Diagram a.

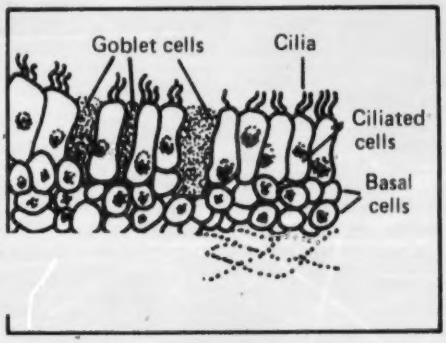


Diagram b.

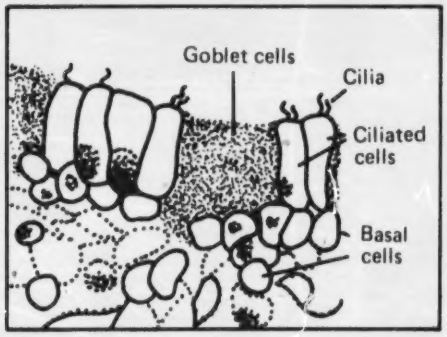
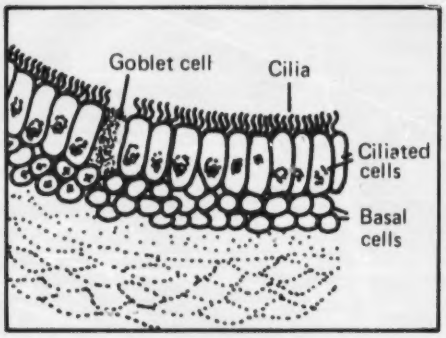


Diagram c.



WB 02-Core-4C

Which of the following is not an effect that smoking has on the body?

a. It causes the epithelium of the windpipe to become thicker and contain more and larger goblet cells.
b. It reduces the number and activity of the cilia in the epithelium of the windpipe.
c. It tends to break down the walls of the air sacs in the lungs.
d. It causes a loss in the control of cell production in the epithelium.
e. It decreases the chance of having a cough or other respiratory problems.

WB 02-Core-5C

Throughout the late fall and early winter, Sally counted the number of students who wore mittens to school and the number who had colds. As the weeks passed, more students wore mittens and more students had colds.

1. Do these data prove that wearing mittens increases the chances of catching colds?
2. Explain your answer.

WB 02-Core-6C

The following statements refer to the death rate among people who smoke. Indicate which of these statements is not correct.

a. The death rate from cancer of the voice box, mouth, and throat is higher for smokers than for nonsmokers.
b. The death rate for people who stop smoking is just as high as the death rate for those who keep smoking.
c. The death rate for people who smoke fewer cigarettes a day is lower than the rate for those who smoke many.
d. Smokers who inhale deeply have a higher death rate than people who smoke but do not inhale.

WB 02-Core-7C

Some persons may have a physical dependence on a particular drug. Give an operational definition for *physical dependence*.

WB 02-Core-8C

State an operational definition of *psychological dependence*.

WB 02-Core-9C

For each of the following situations

(a) indicate whether the person described is physically or psychologically dependent on the drug and
(b) explain your answer.

Situation 1. Arthur was given medication for stomach pains. While he was taking this medicine, he was not bothered by the pain. Then his doctor found that his stomach pains were caused by an allergy to milk. He eliminated milk from his diet and stopped taking the medication. He found this pain was much worse than before unless he took the medicine daily.

Situation 2. Ruth tried a new brand of cough syrup last year when she had a severe cold. She said, "It really makes me feel great." Now, she almost looks forward to catching a cold so that she has an excuse for taking some more of that cough syrup.

Mrs. Weaver is pregnant. Her doctor advised her to stop using antibiotics to control her hay fever. Explain why the doctor is concerned about the drugs Mrs. Weaver takes while she is pregnant.

WB 02-Core-10C

Paul took a drug that upset his saliva glands. His saliva glands made too much saliva. Diagram and label a possible negative feedback system that might no longer be working because of this drug.

WB 02-Core-11C

List two different ways that messages are sent in the human body.

WB 02-Core-12C

Two terms that sound alike but don't mean the same thing are *drug use* and *drug abuse*. Explain the difference between them.

WB 02-Core-13C

The four parts listed below make up most plants and animals. Arrange these parts in order from the simplest to the most complex.

1. Organ
2. Cell
3. Organ system
4. Tissue

WB 02-Exc 2-1-1C

Explain why it is necessary for most plants and animals to be composed of many different kinds of cells instead of just one kind of cell.

WB 02-Exc 2-1-2C

What are three advantages of an interview over a written questionnaire?

WB 02-Exc 2-2-1C

Professional interviewers spend a great deal of time learning to ask the same questions and to use exactly the same tone of voice when conducting a series of interviews. Why is this training so important?

WB 02-Exc 2-2-2C

Despite the advantages of a personal interview, much research is carried out using written questionnaires. What are several advantages of using a written questionnaire?

WB 02-Exc 2-2-3C

WB
02-Exc 2-2-4C

Casey wanted to do a survey to determine student attitudes toward marijuana. The first part of his questionnaire is shown below.

SURVEY OF STUDENT ATTITUDES TOWARDS MARIJUANA

1. What is your name?
2. What is your age?
   [ ] 8 - 10
   [ ] 12 - 18
   [ ] 18 years or older
3. You don't smoke marijuana, do you?
   [ ] yes
   [ ] no
4. Do you think that people who smoke marijuana are very bad?
   [ ] yes
   [ ] no

Improve this questionnaire by rewriting it and making at least three changes.

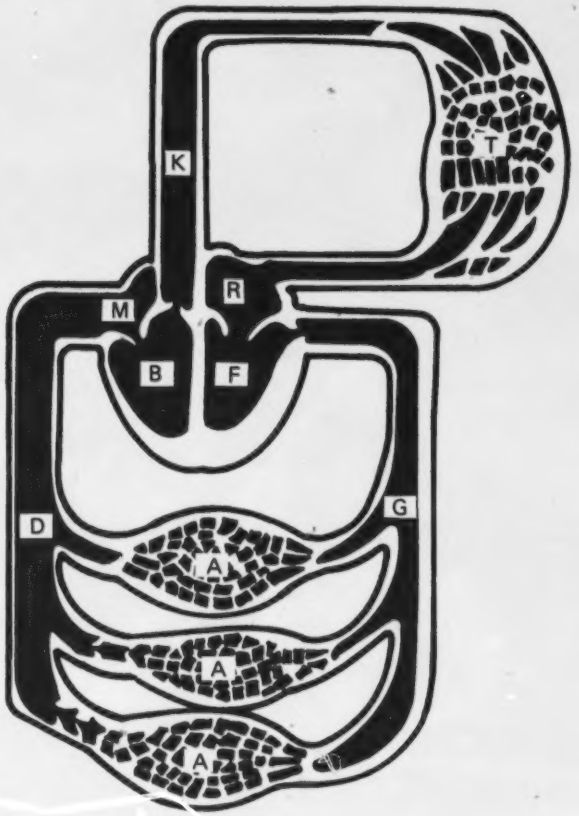
WB
02-Exc 2-3-1C

The diagram below represents the human circulatory system.

1. Name the organs indicated by letters A and E.
2. Name the kinds of blood vessels indicated by letters B, C, and D.

The diagram below represents the human circulatory system. Indicate the path that blood flows through the body by listing, in order, the letters that correspond to the various parts. Start and finish with the part labeled G.

WB
02-Exc 2-3-2C



Give two reasons why red blood cells are important to the functioning of the body.

WB
02-Exc 2-3-3C

Sean Dorsey is taking a drug that is a depressant. Define *depressant.*

WB
03-Core-1C

List two effects you might notice in a friend who was taking a depressant drug.

WB
03-Core-2C

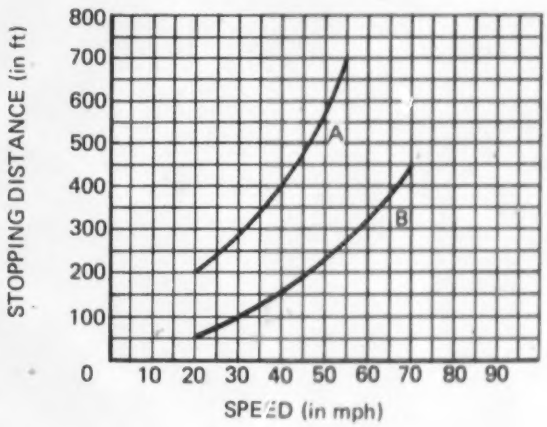
Physicians often use depressants to treat people who are sick. Select the helpful effects of depressants which might cause a physician to prescribe them.

WB
03-Core-3C

a. To relieve the pain from cancer
b. To help a person react faster
c. To reduce the tendency to cough
d. To reduce restlessness
e. To increase alertness

The graph below shows the distances required to stop a car at different speeds. One line shows the stopping distances for the same driver after he has been drinking.

WB
03-Core-4C



1. Which curve represents the stopping distance for the driver when he has been drinking?
2. Explain why the driver has different stopping-distance curves before and after drinking.

Some people argue that to determine whether a drinking driver should be charged with drunken driving, a reaction-time test is better than a blood-alcohol level test.

WB
03-Core-5C

1. Why is the blood-alcohol level test not always fair?
2. Why might testing a driver's reaction time be fairer?

WB
03-Core-6C

Three different people, all about the same size, took the drugs listed below.

Person 1	2 sleeping pills
Person 2	1 sleeping pill and 1 oz whiskey
Person 3	2 oz whiskey

1. Which person is likely to be affected most by these drugs?
2. Explain the reason for your answer.

WB
03-Core-7C

Indicate which of the items in the list below are useful properties of a stimulant prescribed by a doctor.

a. Helps cure an upset stomach
b. Helps people get to sleep and have a good rest
c. Relieves severe pain
d. Relaxes people who tend to be nervous
e. Reduces the appetite

WB
03-Core-8C

Stimulants can cause physical and psychological changes in a person who uses them. Record the letters of any of the following which can be the effects of stimulants.

a. Reduced appetite
b. Flashbacks – experiencing the effects of the drug at a later time when the user has not taken the drug recently
c. Nervousness, irritability, and anxiety
d. Physical dependence on the drug
e. Increased aggressive and unpredictable behavior

WB
03-Core-9C

Larry and Tony are driving across the country. They plan to take pep pills, which are stimulants, because Tony says the pills eliminate the need for sleep caused by driving long hours.

1. Are pep pills really an effective substitute for sleep?
2. Explain your answer.

WB
03-Core-10C

Sometimes a person may say that he is beginning to develop a tolerance to a drug. What does it mean to say that you are developing a tolerance to a drug?

WB
03-Core-11C

Match each drug with its possible source.

Hallucinogenic Drugs	Possible Sources
1. Psilocybin	a. Fungus (mold) on grains
2. Mescaline	b. Hemp plant
3. Marijuana	c. Mushrooms
4. LSD	d. Peyote cactus
	e. None of these

A scientist is interested in measuring the effects of marijuana on a person's ability to work as a waiter. Below is his operational definition of a *good waiter.* **WB 03-Core-12C**

A person's ability to work successfully as a waiter is detected and measured by his score on a written test of the operating rules of the restaurant where he is to be employed. The higher his score, the better waiter he is.

1. Is this a good operational definition of a *waiter*?
2. Explain your answer.

A man and his wife took exactly the same amount of a hallucinogenic drug. **WB 03-Core-13C**

1. Would you expect them both to experience the same psychological effects?
2. Explain the reason for your answer.

Suppose one of your friends has some LSD he wants to try. He knows that you have been discussing the effects of hallucinogens in your science class. "What undesirable or unpleasant things could LSD do to me?" he asks. **WB 03-Core-14C**

List at least four different things you could tell him.

A friend of Bernie's says he has taken LSD, a hallucinogen, eight times during the last year and has not experienced any bad effects. He claims that all this talk about LSD causing bad effects is just meant to scare people. **WB 03-Core-15C**

1. Does his experience prove that hallucinogens do not produce any bad effects?
2. State two reasons which support your answer.

State a definition for the term *placebo.* **WB 03-Core-16C**

Scientists who test the effectiveness of a drug give some people placebos and other people the active drug. Explain why the scientists do this. **WB 03-Core-17C**

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1. Describe what is meant by *double-blind experiment.* **WB**
2. State why double-blind experiments are used. **03-Core-18C**

Sandy is helping her teacher investigate the effects of a certain pep pill. Sandy has 5 numbered mice in her part of the study. She is given pills that look identical, except that they are numbered. Sandy's teacher knows that numbers 1 through 4 are pep pills and number 5 is a placebo. But Sandy does not know which pills are which. Each day she gives every mouse one pill with his number on it, and records their behavior for an hour. **WB 03-Core-19C**

1. Is Sandy involved in a double-blind experiment?
2. Explain your answer.

WB **03-Core-20C**	Your text suggests two reasons why laws are passed. State the text's reason that each of the following laws was passed. 1. A person under the age of 16 cannot buy cigarettes. 2. No one shall be allowed to charge more than 8% interest for a loan on a house.
WB **03-Core-21C**	In Chapter 6, you read that laws are passed for two reasons. One reason is to protect people from other people. The other reason is to support certain moral standards. 1. Does the following law fit one of the above categories? "Everyone living in Marion County must pay a county income tax." 2. If it does, explain how. If it doesn't, explain the reason that such a law might be passed.
WB **03-Exc 5-1-1C**	For each of the following, indicate whether it is an illusion (I), a delusion (D), or a hallucination (H). 1. A person feels that the whole world is out to get him. 2. A person on an LSD trip says he can hear the color green. 3. A person believes that if he steps on a crack he will have bad luck. 4. While driving across a desert, a person says he sees water on the road in the distance. 5. A driver stopped at a traffic light feels that his car is rolling backwards when he notices the car next to him moving ahead.
WB **03-Exc 5-2-1C**	The DSST was used with new and regular users of marijuana. The test could be thought of as an operational definition of *matching ability*. Explain why the DSST is an operational definition of *matching ability*.
WB **03-Exc 5-3-1C**	In the apartment next to Willis and Mike Haig's, there was a very loud and noisy party last night. Willis said that it sounded like a pot party. Mike thought it sounded more like a drinking party. 1. Were the people at the party more likely to have been smoking marijuana or drinking alcohol? 2. Explain your answer.